BIBLIOGRAPHIC DATA SHEET	1. CONTROL NUMBER PN-AAH-394	2. SUBJECT CLASSIFICATION (695) NC00-0000-G356

3. TITLE AND SUBTITLE (240)

A study of midwives (Comadronas)

4. PERSONAL AUTHORS (100)

5. CORPORATE AUTHORS (101)

AID/LA/USAID/Guatemala

6. DOCUMENT DATE (110)	7. NUMBER OF PAGES (120)	8. ARC NUMBER (170)
1977	37p.	GT61Ø.76378.U58

9. REFERENCE ORGANIZATION (130)

Guatemala

10. SUPPLEMENTARY NOTES (500)

(In Guatemala health sector assessment, annex 5.3)
(Main report, 343p.: PN-AAH-391; Annexes, PN-AAH-392 - PN-AAH-407)

11. ABSTRACT (950)

12. DESCRIPTORS (920)

Guatemala
Public health
Midwife
Training methods
Health personnel
Program planning
Training facilities
Participation

13. PROJECT NUMBER (150)

14. CONTRACT NO.(140)

Guatemala

15. CONTRACT TYPE (140)

16. TYPE OF DOCUMENT (160)

16

AID 590-7 (10-79)

PN AAH-374

ANNEX 5.3

A STUDY OF MIDWIVES (COMADRONAS)

GUATEMALA HEALTH SECTOR ASSESSMENT

November 1977

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ANNEX 5.3

A STUDY OF MIDWIVES (COMADRONAS)

I. DESCRIPTION OF THE PROBLEM

A. The Size and Nature of the Problem

The focus of concern in this section is the effectiveness of comadrona 1/ (midwife) training and supervision. While approximately ten private voluntary organizations also do midwife training 2/, the emphasis here is on the programs of the Ministry of Public Health and Social Welfare (MOH). The activities of private voluntary organizations in this area are treated elsewhere in the Health Sector Assessment.

1/ Various terms are used in reference to midwives, interchangeably and sometimes inexactly. Comadrona and partera may be considered Spanish equivalents; the term iyom (Quiché/Tzutuhil) has more honorific overtones than its Spanish-language counterparts.

Comadronas are subdivided by public health personnel into several categories. Comadronas tradicionales are those midwives who practice without any training or licensing from the Ministry of Health; they have hitherto been termed comadronas empíricas. Comadronas autorizadas are those who have been given a carnet or license to practice by the Ministry of Health as a consequence of having been trained and/or having passed an examination. These are further subdivided into comadronas adiestradas, those who have received initial training, and comadronas readiestradas, those who have received additional training and who have been relicensed. These titles are those now recommended by the DIMIF under the Plan de Adiestramiento y Readiestramiento de Comadronas Tradicionales, replacing usages such as comadronas empíricas and tituladas. In one primarily Ladino site visited, comadronas having a good relationship with the health center were reported as referring to themselves as comadronas recibidas, implying, at least in part, a sense of welcome and prestige.

In addition to these women, there are unknown numbers of other individuals largely in rural areas, ranging from those with no training, except the experience of motherhood, to those with some formal medical or paramedical training who include midwifery as part of their other activities.

2/ These include: Save the Children (Joyabaj); Parroquia Santo Tomás de Aquino (Santo Tomás de Castilla; Maryknoll Health Program (Jacaltenango); Daughters of Mary, Helpers of the Sick (Novillero); Project Concern (Santiago Atitlán); Canadian Mission (Gualán); Centro Apostólico San José (Morales); Clínica Behrhorst (Chimaltenango, Uspantán, and San Pedro La Laguna).

The estimate given in the work scope for the Health Sector Assessment as a basis for calculating the effectiveness of training programs is the following: of 6000 midwives recorded as trained during the last twenty years in courses sponsored by the Ministry of Public Health in conjunction with UNICEF and/or USAID, 905 (only 15%) were registered in 1975 as practicing. However, recent conversations with those responsible for the midwife training program in DIMIF (the Maternal and Child Health Division) of the Ministry of Public Health indicate (1) that a 1975 survey in eighteen departments of the municipal registries revealed that there were approximately 13,000 midwives recorded, with an estimate for the other two departments bringing the total up to 16,000, and (2) that in the period 1971 through 1975, a total of 1726 midwives had been trained under the DIMIF programs (see Table 1, Map 1). While this training figure represents 80% of the DIMIF goals, it still represents only 11% of the recorded number of midwives and it is possible, as DIMIF itself recognizes, that the recorded number is only part of the real total since a number of midwives are afraid of acknowledging their professional activities; the "real" number of practising midwives, i.e., those attending childbirths with any kind of regularity for recompense in cash or kind, could be as high as 20,000 for the whole country.

As for attrition, there is consensus both within and without Ministry circles that prior to 1971 there was considerable loss not only in terms of number of active midwives maintaining formal

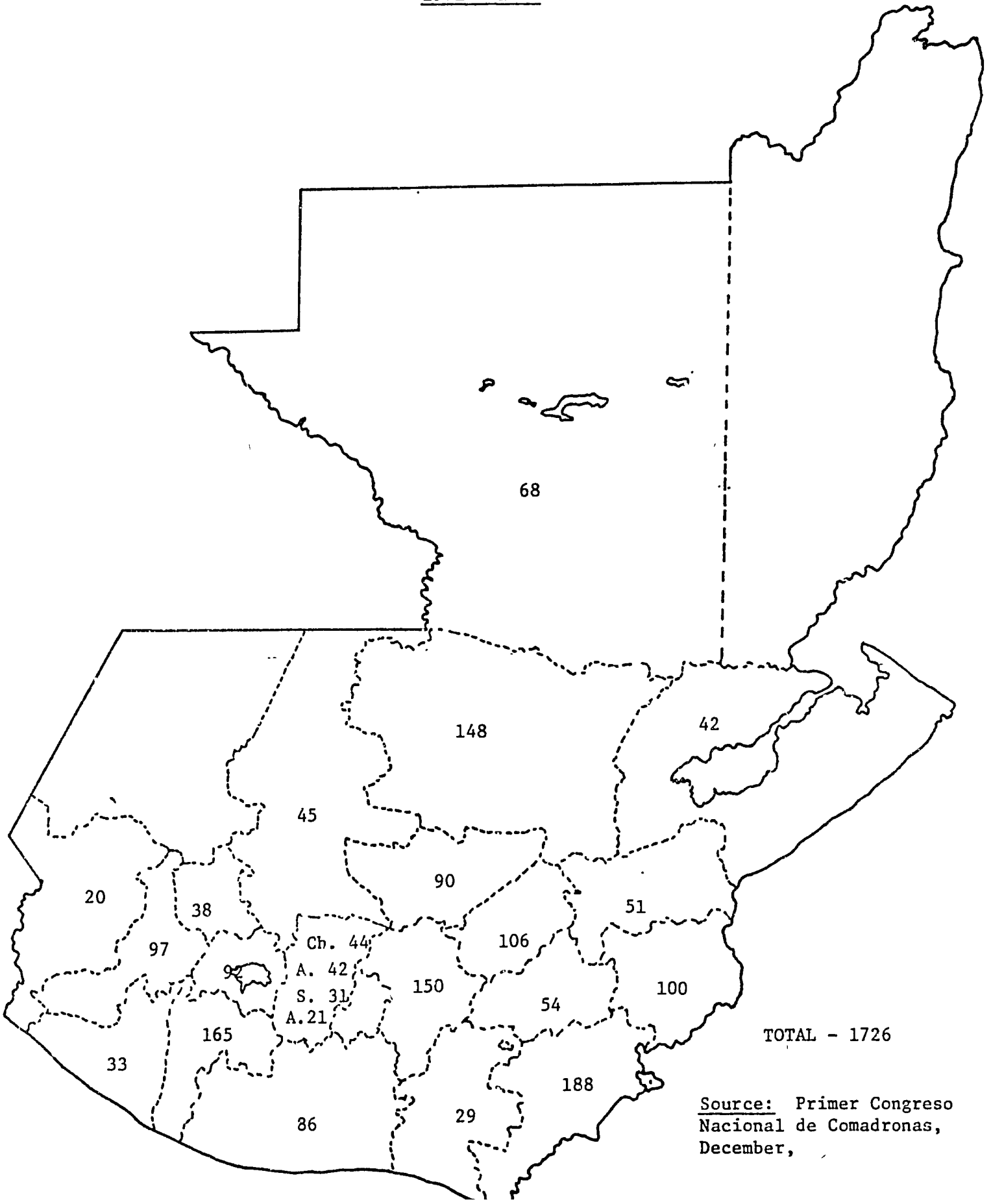
TABLE 1

TRADITIONAL MIDWIVES TRAINED
PER YEAR AND TOTALS

	1971	1972	1973	1974	1975	TOTAL
COBAN	30		43	40	35	148
CHIQUIMULA	46			39	16	101
PROGRESO	15		91			106
ZACAPA		36			15	51
JUTIAPA		152	15	21		188
IZABAL			42			42
SALAMA			55	35	16	106
RETALHULEU			15	18		33
MAZATENANGO			93	56	16	165
SAN JUAN SACATEPEQUEZ			31			31
JALAPA				54		54
GUATEMALA NORTE				65	13	78
SOLOLA				92		92
QUEZALTENANGO				82	15	97
TOTONICAPAN				38		38
ESCUINTLA				86		86
CHIMALTENANGO				44		44
CUILAPA				16	13	29
GUATEMALA SUR				26	15	41
ANTIGUA				28	14	42
PETEN				38	30	68
AMATITLAN					21	21
SAN MARCOS					20	20
QUICHE				45		45
TOTALS	91	188	385	823	239	1726

MAP 1

TRAINED MIDWIVES
BY DEPARTMENT
1971 - 1975



TOTAL - 1726

Source: Primer Congreso Nacional de Comadronas, December,

links of some kind with the MSPAS and its facilities, but in terms of numbers of active midwives maintaining formal links of some kind with the MOH and its facilities, but in terms of the quality of continuance, that is, the actual utilization of practices supposedly taught and learned in training programs. Knowledge in the latter areas, primarily due to inadequate supervision of midwives, trained or otherwise, is particularly deficient. Even in the new training program, supervision is a major problem, largely due to lack of personnel, and there is an estimated 25% loss from the program, despite the requirement for retraining and relicensing one year after the original training, and despite what appears to be a generally high value placed on obtaining the carnet (license).

Related to this is the issue of coverage. The Demographic Analysis Unit of the Directorate of Statistics and Census reports 248,265 live births in 1975. That office estimates that this represents 98.5% of the total; in other words, the under-registration is not significant.

It can be assumed that with a high national population growth rate that this live-birth figure has not gotten any smaller. Of the total live births in 1975, 38,210 are recorded as having taken place in public-sector facilities (MOH, 24,471[1/] and Instituto Guatemalteco de Seguridad Social (IGSS) 13,739[2/]). This leaves a remainder of 210,055 live births attended outside public-sector

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1/ Data supplied by the Ministry of Public Health, May 1977.

2/ Instituto Guatemalteco de Seguridad Social, Informe Anual de Labores, 1975. Guatemala, 1976. Figure is for live births only; counting abortions would add another 1,922.

facilities. No data were readily available concerning private-sector facilities, but given the relatively small percentage of the population that can afford such services, and a tendency toward lower fertility in upper-income groups, the number of births in private-sector facilities is not overwhelmingly meaningful for the present argument.

It seems safe to say that even accounting for a certain number of private-facility births, there are over 200,000 births per year in Guatemala which can be lumped together with reasonable assurance under the rubric "domiciliary childbirths". These are births assumed to be attended largely by either empirical or trained midwives, with an unknown percentage being self or family-attended.

Accepting the figure of 200,000 live births taking place outside formal medical facilities and dividing it by the 1,726 midwives trained since 1971, yields a caseload of approximately 116 births attended per-midwife-per-annum. This does not agree with what is indicated by in-depth studies (see Table 2).

The maximum recorded caseload for a topflight comadrona in San Pedro La Laguna, famed for the quality of its midwives, was 121 in 1973 (Paul, 1975). On the other hand, midwives in one community (Santiago Chimaltenango) have been recorded as attending an average of as few as four births per year in 1938 (Wagley, 1941) when there were far fewer medical options for rural residents than there are now.

TABLE 2

AVERAGE COMADRONA CASELOAD
IN SELECTED COMMUNITIES

Data Source	Date	Community and Ethnicity of Majority of Population	Estimated Average Caseload per Comadrona
Paul	1941	San Pedro La Laguna (Indígena)	59
Paul	1974	San Pedro La Laguna (Indígena)	38 1/
Woods	1968	San Lucas Tolimán (Indígena)	39
Douglas	1969	Santiago Atitlán (Indígena)	24
Cosminsky	1973	Santa Lucía Atitlán (Indígena)	22
Gonzáles	1963	San Antonio La Paz (Ladina)	17
Wagley	1949	Santiago Chimaltenango (Indígena)	4

1/ This average is quite skewed. Two of the newer midwives had only 8 deliveries each, while the most popular midwife delivered 121 in that year; the second most popular delivered 57.

The very few ethnographic accounts which give caseload averages for midwives are summarized in Table 2. Arbitrarily averaging these reported caseloads yields an estimated caseload per practicing midwife of 34 per year. The same sources indicate that the comadronas included were a combination of certified, trained, and empirical practitioners, but there is no consistent breakdown of caseloads according to type of practitioner preparation.

The difference in caseload between trained midwives and untrained midwives is unknown. The caseload of 116 births attended per year which results from a calculation on the basis of 1726 trained midwives is too high. If the DIMIF estimate is used, of 16,000 total practising midwives, trained and untrained, in all of Guatemala, it yields a caseload per midwife of 13 per annum, which is too low according to the average taken from the in-depth ethnographies. It would seem important to have a better idea of average midwife caseload for all midwives and the difference in caseloads between the trained and untrained, to get some idea of the utilization and appreciation of trained as opposed to untrained comadronas. The data simply are not available.

The statistical waters are further muddied by the fact that there are childbirths unattended by any sort of paraprofessional. It is the custom for other female relatives to be present at childbirths and many campesino women who are not even defined by their community as comadronas may feel that they have acquired some expertise which may at times be called on, particularly in remote areas. How prevalent this is, is unknown.

B. Comparison of the Situation with GOG Plan Objectives

As part of its strategy for extending maternal-child health coverage, the Five-Year Health Plan for Guatemala,(Plan Nacional de Salud 1975-1979) includes "training and incorporation of the traditional midwife as a multiplier agent". However, no more specific strategy is spelled out, norare any coverage goals specifically elaborated.

II. ANALYSIS OF THE SITUATION

A. The Problems

The problems perceived by the DIMIF in relation to midwife training are essentially problems of supervision and evaluation, sufficient numbers of training personnel, and financial problems. While these problems are real and crucial, there are also problems of fundamental strategy, pedagogy, and underlying these, socio-cultural problems.

1. Supervision and Evaluation

There are simply not enough qualified, properly-oriented personnel to adequately supervise and evaluate the midwife training program. Supervision at present is largely limited to the feedback acquired through retraining (24 hours of class time prior to annual relicensing) and checking of usage of midwife kits. An attempt has been made to interview mothers, but they generally have such high regard for "their" midwife that objective appraisal is difficult to obtain. Affection and regard are certainly valuable

testimonials, but they do not provide much information about quality of service or fulfillment of training directives.

2. Sufficient Training Personnel

The inadequate numbers of personnel to fill supervision and evaluation needs is reflective of a general lack of personnel to implement or expand the program. Nurses who graduate from the National School of Nursing are not trained in midwifery and must themselves be trained for utilization in the program.

3. Financial Problems

The midwife training program receives no budget support from the Ministry of Health. DIMIF provides administrative support and advice, but no funds. UNICEF, which had provided funding, was asked for $33,000 for the 1976 activities, but provided only $13,000 based on $43.00 per trained comadrona, which included $30.00 per diem during training and $13.50 for each kit. This year UNICEF is providing money only for training in the earthquake disaster area.

4. Strategy Problems

The strategy underlying the midwife program is training at the health center level and midwife patient referrals to that same level. While this does formalize the linkage of the midwife to the fixed facility and assure some control over her activities, it also, for reasons of geography and logistics, effectively excludes large numbers of midwives and patients for whom access to the health center ranges from difficult to impossible.

5. Problems of Pedagogy

Pedagogical style naturally varies from trainer to trainer, depending to a certain extent on personality, and it is difficult to comment on whether the most prevalent style is an essentially authoritarian or a participatory one. The lack of adequate audio-visual materials is a limiting factor, whatever the teaching style.

However, the contents of the Guide currently in use indicate that a very great deal of material is crowded into the initial training period of 120 hours. Given the low educational levels of most midwives, this is probably more material than they can possibly absorb and integrate into behavior.

More important, is that the Guide follows an apparently logical sequence of Orientation, General Hygiene, Preparation of Material and Arrangement of the Kit, Pregnancy, Generalities About Childbirth, Home-Attended Childbirth, the Post-Partum Period, and the Newborn. This sequence runs the risk of having dropouts from training miss the elements which are most crucial to maternal-child health, particularly the danger signs of the prenatal, childbirth and post-partum stages, as well as the crucial elements of fundamental hygiene. Little attention appears to be paid to diet for pregnant or lactating mothers or to absolutely impermissible behaviors. It may be that because of the heavy emphasis on clinic referrals of patients, sometimes accompanied by midwife, it is felt that some of the prenatal instructions to mothers will be

taken care of through those contacts. It is not clear that this is the case or that the patient-doctor consultation is any more than perfunctory.

6. Sociocultural Problems

One problem cited by DIMIF in training of Indian midwives is the language barrier. Even with the use of a skilled translator it is difficult to be sure that comprehension has been achieved, and trainers who speak one of the 2 Indian dialects are virtually non-existent.

A second problem, though not generalized, is resistance by doctors to the training of midwives and something less than hospitable treatment of the midwives when they bring patients for consultations. A similar problem exists among health center nurses, although this is not widespread.

Another problem is that the design of the training program does not take into account the existing attitudes and behaviors of the trainee population nor consider them as something to be understood, build on, and/or incorporated into program identification and design, rathen than to be necessarily erased. In the case of midwives, there is reason to believe that an attempt to harmonize program activity with the realities of the midwife population, rather than ignore or attempt to overwhelm them, would be especially appropriate.

The data which follow were gathered through interviews with professionals and paraprofessionals, in the private and public sectors,

working in midwife training, with midwives themselves, and through study of the ethnographic literature 1/ dealing with Guatemalan midwives.

The first step is to determine who midwives are, what position they occupy in the community, what they know, what they do and, to the degree possible, why they do it. There are variances in some of these respects between the indigenous and Ladino contexts and from one indigenous area to another; for economy's sake, these differences will be indicated only where they are meaningful to this exercise.

a. Who They Are

In terms of prestige, the respect accorded to midwives ranges from low to high. The low end of the range seems to appear in Ladino communities where the midwife may be feared, apparently on grounds of incompetence, and where some women prefer, if they can, to go to urban hospitals (González, 1963). The high end of the prestige continuum is more prevalent in indigenous communities where the role of midwife and related behaviors go back deep into Maya history, where midwives are respected for their skills, either obstetrical or ritual or both, and where they are treated with deference demonstrated in terms of address, hand-kissing, formal

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1/ The ethnographies examined were listed in Table 1. One of these (Cosminsky, 1976) represents a survey of the literature pertaining to midwives in 23 communities, so there is reason for some confidence in the statements that follow. At the same time, until recently, midwives have not been dealt with extensively or systematically in the Guatemalan ethnographic literature.

requests for aid, and gifts of food and drink (Cominsky, 1976). The extent to which a midwife performs a ritual as well as an obstetrical role varies according to the local availability of shamans and regard for their particular powers (Paul, 1975). In general, shamans are more important and have more extensive responsibilities in northwestern Guatemala and the adjacent Maya highlands, and in the west (El Quiché Department); their importance in southwestern Guatemala, including Lake Atitlán, is less, largely because of prohibitions by the federal government, greater acculturation, and greater effect of Catholic Action and evangelical groups.

However, having ritual responsibilities does not necessarily increase a midwife's status in the community; what seems to correlate best with prestige is experience and, more importantly, successful experience. A midwife who loses too many mothers and babies also loses clientele. A midwife's reputation thus tends to accumulate as she grows older, but age, per se, does not guarantee a midwife a large clientele. In fact, in at least one well-documented community, midwives begin practice typically between 35 and 40, in the prime of life, with their responsibilities for their own children only somewhat lesser, old enough to have achieved "respectable maturity" yet not too old to undertake the rigors of midwifery (Paul, 1975). There is a tendency to think of midwives as old by definition; what is often forgotten is that many midwives must have begun practice long before they were gathered up by would-be trainers at age 55 or 60. The issue of age does vary

from community to community. In 1941, Wagley reported that in Santiago Chimaltenango, older widowed midwives were preferred because they did not have active sexual lives and thus were not likely to endanger patients by breaking the sexual taboo (see below). Newer reports indicate that somewhat younger midwives are valued because of greater strength to cope with the rigors of the profession.

Another contribution to midwife reputation in many indigenous communities is recruitment through supernatural channels. While some midwives are straightforwardly recruited through apprenticeship to a midwife mother, grandmother, or mother-in-law, many also go through the following recruitment sequence which may vary in minor detail among communities but not in its major components (Cosminsky, 1976):

> A sign of predestination at birth, either through a calendrical coincidence or special physical signs;
>
> A long and serious illness leading to shamanic consultation for confirmation of a mandate as a midwife;
>
> Meaningful dreams;
>
> Encountering special objects in one's path which further confirm a vocation;
>
> Disappearance of ill fortune or poor health upon undertaking practice.

There seems to be a generalized tendency for midwives to resist their calling. First of all, midwifery demands behaviors which are not typical of indigenous female culture, i.e., independence and decisiveness; going out alone, often at night; relegation of family responsibilities to secondary importance; sometimes

ritual sexual abstinence which engenders objections on the part of husbands, who also fear criticism for supposedly not being able to provide adequate economic support; and the risk of the dangers of "envy", the resentment of other community members toward those who distinguish themselves in any noteworthy fashion or display unseemly ambition. Midwives must also overcome their own timidity, face the real possibility of failure, and accept a professional lot which entails great personal inconvenience, hard work, and relatively scant financial remuneration.

In view of this, it is small wonder that supernatural approval becomes, consciously or unconsciously, the justification for many rural Guatemalan women who undertake the profession of midwifery. Beyond this, supernatural sanction also tends to inspire greater confidence in the parturient, reducing fear and muscular tension, and easing labor in corresponding measure. It also serves to exonerate midwives from excessive blame in the event of failure, though to be sure the midwife of many failures will eventually be rejected, whatever her purported supernatural credentials.

It is worth noting that even supernaturally-sanctioned midwives are often descendants of midwives or shamans, with resulting parental expectations, and also do not seem to be driven primarily by economic need to assume their profession (Paul, 1975a). In fact, in many communities there are no fixed fees for traditional midwives, although gifts, food, and drink are expected at key

points in the sequence; the amounts, type, and timing of gifts varies. Money gifts are thought of as "honorariums" and ranged in 1969 (Rodríguez Rouanet, 1969) from "what a family could afford" to $3.00, and/or payment in kind. Interestingly, $3.00 is what many midwives now charge. A woman, with the average caseload mentioned earlier of 34 per year, could earn as much as $100 per year. Recent data 1/ from the highlands indicate that smallholders (those with less than ten cuerdas of land) earn on the average $32 net profit per annum from their harvests, $32 per annum from day-labor, $22 from commercial activities, and $24 from migratory labor, for average annual net incomes of $292. Thus, any woman with reasonably regular midwife practice can add notably to her family's economic well-being. At the same time, considering that the normal maternity case may require about 18 house calls, a total of 612 for an average annual caseload of 34, a midwife's home visit averages $0.17 in cost to the patient. If this figure were to be calculated in terms of hours, especially considering long vigils with primíparas (first delivery), the payment is minuscule. At these prices, the traditional comadrona is a servant of her community.

The foregoing detail provides a framework for perhaps a different appraisal of the midwives who are the target population for training programs. To summarize, they are often:

1/ Gerald O'Sullivan, Educación Extraescolar, Ministry of Education, personal conversation.

Respected members of the community, viewed as dedicated community servants who neither receive nor expect great monetary rewards;

Professionals whose skills have been proven by success and are, thereby, in effect "screened" by experience and circumstance before they ever enter a training program;

Possessors of ritual responsibilities and powers;

Supernaturally mandated;

Viewed, in some instances, as also having the capacity to cure illnesses in general, and especially children's illnesses (De Dios Rosales, 1976; Rodríguez Rouanet, 1969; Woods, 1973);

With a sense of competence derived from having overcome a variety of internal and external impediments and from the capacity to affect the world outside their own customary domestic sphere (Paul, 1975a).

Many midwives are, therefore, in effect, already the professionals and innovators development experts long for. To be sure, this is not true of all communities; midwives are sometimes poor, old widows who need the job as much as their community needs them. This does not mean that they lack experience and, in any case, they perform a vital community function. Still, whatever the level of community prestige, it would be wisest for trainers to adopt a posture of respect toward their trainees rather than otherwise.

b. <u>What Midwives Know and Do, and Why</u>

The time a midwife is first contacted by the family of a potential parturient varies among communities, but most commonly the prospective parents seek her services between the fifth and seventh month. The number of visits a midwife makes also varies;

the generalized custom is a monthly visit earlier in pregnancy, increasing to weekly visits in the last month.

In addition to their knowledge of the ritual demands of childbirth, and in many communities these demands begin with the first contact between midwife and expectant parents and end eight days after birth, midwives often command occult skills such as reading birth signs from the amniotic membranes and umbilicus. They are often already skillful in calculating the month of pregnancy, recommending appropriate maternal behavior, determining fetal position, recognizing signs of birth stages, 1/ providing psychological support for their clients, and understanding the social and cultural context of this major life event.

Midwives are also considered knowledgeable in areas about which modern practitioners have often justifiable concern: diet, including herbal usage before, during, and after childbirth; massage and fetal manipulation; certain types of hygiene; appropriate positions for delivery; treatment of the umbilicus; and lactation management. However, contrary to the beliefs of many modern practitioners, not all of the midwife behaviors in these areas are harmful, some are innocuous, some are increasingly recognized as beneficial, and some are presently being researched in more-developed

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1/ This is not to say that there is a clear picture of three distinct stages in childbirth itself. Trainers claim that most midwives and patients see childbirth as a single episode and that this generates the dangerous practice of urging mothers to exert expulsive pressure too early.

Table 3

PRE-NATAL ROLE OF THE TRADITIONAL COMADRONA, GUATEMALA*

ACTIVITY	DESCRIPTION AND COMMENT	BENEFICIAL ASPECTS	HARMFUL ASPECTS	INNOCUOUS ASPECTS
Pre-natal visits per se	Average beginning 5th-7th month. Average frequency every 20 days or one/month till last month when one/week.	Psychological support for mother, crucial in context where primíparas ignorant and multíparas fearful, in period considered very dangerous. Confirms pregnancy; sets in motion protective behaviors. Frequency of visits acceptable.	Visits begin too late	
Prediction birth date	Generally competent in this regard.	Yes.	Only if incorrect.	
Prayers and associated ritual		Support for mother and family in perilous time.		
Prediction of sex of child	Some midwives said to be able to tell from position, height of abdomen, marks on mother's face; some even believed to be able to change sex.			Probably innocuous and not unknown as practice among modern physicians. Psychic aspects knotty in all cultures
Massage with warmed oil or grease	Varies from gentle, superficial massage to vigorous; expressed purpose to determine position of fetus.	If gentle, no great risk and may offer psychological support and physical relaxation for mother.	If vigorous, dangerous.	
Fetal manipulation	To put fetus in appropriate birth position (head presentation; other presentations recognized as dangerous.		Unqualified risk.	
Advice regarding behavior		If limited to restraining mother from heavy work and carrying heavy objects in last months.	If overemphasis on such folk fears as eclipses, seeing twins, etc., may add to already considerable load of anxiety.	
Sweatbath	Consensus that practice decreasing in general and in particular related to pregnancy/childbirth, in response to modern medical advice. Some continued use in post-partum ritual. Decrease may continue due to earthquake destruction of temescales.		In late pregnancy, may be weakening for mother.	
Dietary prescriptions and proscriptions	Avoidance very hot or very cold foods (beans, pork, avocados, eggs, certain greens, etc. variable) Prescribed satisfaction of all cravings (e.g., fruit, chicken, bananas, earth, salt, special clay tablets, Pan del Señor). A belief exists that small babies are better because labor is correpondingly easier. Prevalence of this belief is not known.	Prescriptions may counter avoidances to permit balance, but.....	These avoidances per se are not harmful, but studies** show very low protein-caloric intake and startlingly low ingestion of animal protein and Vitamin A for pregnant Guatemalan women. For very poor women, withdrawal of beans may eliminate principal, if not virtually sole, protein source. Earth craving may reflect nutritional deficiency, especially mineral needs. Salt prescription should be discouraged, especially in women showing tendency to edema.	

* Information in these tables represents a compendium of data from the sources listed in the bibliography.

** Studies in both indigenous (Acatenango) and Ladino areas (Los Planes, 1967-8 and San Antonio La Paz, 1963). Women do increase their total nutrient intake in the second and third trimesters of pregnancy, but the increase is still deficient in quantity and quality, correlating with low maternal weight

TABLE 4

ROLE OF THE TRADITIONAL COMADRONA, GUATEMALA, DURING CHILDBIRTH

ACTIVITY	DESCRIPTION AND COMMENT	BENEFICIAL ASPECTS	HARMFUL ASPECTS	INNOCUOUS ASPECTS
Arrival for birth	28% of indigenous midwives arrive just before mother to give birth, 69% indigenous, 70% ladinas, and 91% transitional midwives arrive when first pains begin.*	Yes	Should be earlier for adequate preparation. If urge mother to begin expulsion efforts too soon.	
Identification of signs of imminent birth (sac rupture, dilation, contraction frequency, etc.)	Consensus that most midwives have skill in this area; problem not with stage recognition but with sense of appropriate time for exertion.	If understood and used as basis for instructing women on labor management.	Examination for dilation potential high risk.	
Massage	Use of warm lubricant; supposed to warm fetus, loosen, make slip out easier. A generalized behavior.	Only if done gently, as a soothing exercise for mother, or as dorsal support, rather than as aid to expulsion.	In general, yes.	
Manipulation of fetus to correct birth position.	A generalized behavior.	None	Yes	
Encouragement of mother to exert expulsive pressure.	A generalized behavior.	Only if synchronized with second stage of birth, after "crowning".	If too early, exhausts mother.	
Decision on birth position	Many midwives, even trained, seem to leave up to mother. 58% indigenous, 34% ladinas, 29% transitional women delivered kneeling. 24% indigenous, 10% ladinas, 0% transitional delivered squatting (encuclillada). 25% indigenous women delivered in supine position	No longer clear that supine position optimum, except regarding benefits of better visibility for practitioner. Kneeling and squatting may not only be innocuous, given adequate hygiene for receiving fetus, but physically easier on mother and child. Needs research in ample recent literature.		
Insert hands to help birth before head emerges.	Not reported in ethnographic literature but, according to health workers, a not uncommon practice.		Yes	
Vaginal lubrication	Use soap.	Yes		
Sweatbath, sitz, or vapor baths for mother	Use said to be diminishing except in very remote regions.		Yes; weakening.	
Administration of herbal potions	Vary in purpose from innocuous teas and broths to hearten and nourish mother to those intended to expedite expulsion of fetus or placenta.	Warm drinks of caldo or harmless teas beneficial both physically and psychologically.	Used to provoke uterine contractions: ciguapate, pimpinela, albahaca, aguardiente. Value, danger, needs research.	
Delivery of placenta	Many methods, varying; sometimes pull out. Not clear degree of knowledge about proper time limits for placental expulsion. Customary ritual burial of placenta in belief that has special relationship to child**		Yes	Probably not harmful tradition, though vigorously discouraged by modern health workers.

Treatment umbilicus	Most common not to cut until placenta expelled. Increasing use of scissors to cut, though in more remote areas continued use of cautery with hot knife and application of hot candle wax. Some areas still use of such treatments as powdered myrtle leaves, saliva, alder sap, grease, and ashes.	If scissors are not sterile,
Treatment of newborn	Standard practice: wash with warm water and soap, or with oil, wrap in warm clothes. No reports on special eye treatment which suggests ignorance of importance. Sweatbath with mother to warm and "start blood going". If child has difficulty breathing, touch fontanelle or try to push up through palate.	Yes Yes, but practice diminishing. Yes
Referral of emergencies encountered in birth	73% indigenous families, 41% of ladino and 64% of transitional families did not look for anyone else to help. 10% of indigenous, 24% of ladinas, and 16% of transitional families get patient to hospital. Almost none seek any other kind of midwife or health post personnel.**	Yes
Administration of liquids to newborn until mother's milk comes	The largest group giving nothing is indigenous women. Rest give cooking oil, undefined syrups, sugar water. No data on variation among ethnic or geographic groups on use of colostrum; some mothers nurse at once, others express and begin nursing in two days.	Yes. Loss of colostrum can be crucial for child's survival in low hygiene, remote environments. Immediate nursing speeds placental ejection. uterine restoration.

* De Dios Rosales, 1976. In this study the following patterns of asepsis during midwife-attended childbirths were observed:

	Indigenous Women	Ladino Women	Women in Transitional Communities
Disinfection of instruments (yes)	68%	83%	82%
Use of alcohol	29%	60%	--
Use of hot (sic) water	23%	23%	--
Cutting of umbilicus			
With scissors	57%	97%	100%
With knife	21%	--	--
Cautery of umbilicus			
Warm wax	37%	--	--
Hot rags	26%	--	--
Licopodio	--	73%	--
Alcohol	--	22%	40%

** Ibid. 87% of indigenous families, 69% of ladinos, and 56% of transitional families buried the placenta. The rest burned it.

TABLE 5

ROLE OF THE TRADITIONAL COMADRONA, GUATEMALA, AFTER CHILDBIRTH

ACTIVITY	DESCRIPTION AND COMMENT	BENEFICIAL ASPECTS	HARMFUL ASPECTS	INNOCUOUS ASPECTS
Visits to mother and child	Considered dangerous time. Seclusion ranges from 8 to 20 days, depending on pragmatic considerations (physical health, number of female relatives to help in house). Bed rest varies similarly, with majority of ladinas maintaining bed rest for 2-5 days; indígenas 6-10 and, to lesser degree, 11-20 days; transitional women 6-10 days.	Yes		
Massage	Believed to increase flow of blood cleansing woman, increase milk flow, make womb return to proper size.	Yes		
Adjustment of maternal binder	Keeps womb in place, "closes the bones", keeps stomach from sagging.			Yes
Bath, massage in sweat-bath of mother	Women in "cold" state after birth (pregnancy a "hot" condition). Frequency daily or every few days.	Practice decreasing, supposedly due to governmental "prohibitions", claim by physicians that is weakening. Tendency increasing to bathe in house, with corresponding diminution of presence of midwife; least change among transitional groups. Sweatbath possibly beneficial at this point in relaxing sore muscles, soothing pain, stimulating circulation and flow of milk, preventing infections. Needs research.		
Dietary prescriptions and proscriptions	Duration 1-20 days maximum. Prescriptions: chicken soup, atoles, herbal teas, hot drinks, bananas, toasted tortilla, french bread, chocolate (primarily ladinos), boiled milk (transitional), beer (transitional). Avoidance very cold or acid foods so milk does not curdle or get cold, bad for baby. Herbal teas include manzanilla, alhucema, cominos, aguardiente, anís, clavo, pimienta, cordoncillo, canela, artemisa, salvia, honey. To clean womb, eliminate aches and pains.	High ingestion of liquids beneficial, but.....	Studies* show continued low caloric and animal protein intake during lactation, result net maternal tissue loss, inter alia.	
Ritual at end of confinement, including: special hygienic activities, ritual bathing, prayer, food, drinks		Yes Yes Yes (community recognition, restoration of mother to normal status, ritual cleanliness)		
Treatment 7-day fever (puerperal)	Costumbres, copal, incense, burn candles, prayers.		Yes, in that it does not deal with real medical issue.	

* Flores, et al, n.d., and Arroyave, cited in PAHO, 1970.

countries as possibly superior to what is considered "modern" practice. 1/ These are listed and discussed in Tables 3, 4, and 5, divided according to stages of pregnancy, childbirth, and the post-partum periods in which the midwife is involved. The midwife whose behaviors these tables describe is not the freshly-trained product of current programs, but what is now termed the comadrona tradicional (the empirical midwife).

III. PROPOSED ACTIONS AND PROGRAMS

A. Alternative Program Approaches

1. It is suggested that USAID give thought to supporting the comadrona training program, with an eye to undertaking innovations in terms of strategy and curriculum content, the details of which are given below. The costs of such support would be quite low, with a potential for high effectiveness in terms of the population served and the reduction of infant mortality (see Tables 6 and 7 for current budget and costs). Such support could be used for training supervisors and trainers, program evaluation, curriculum redesign, and/or an experimental effort in community-level training geared to a trainee population outside the range of the health center or perhaps even the health post.

1/ Such as squatting or kneeling for delivery, instead of use of the supine position (see Haire). It is the custom not only for other female relatives to be present at a childbirth, but for the husband of the parturient as well. The justification for the presence of the latter is twofold: 1) to physically support the woman who uses the squatting or kneeling delivery position, and 2) to "understand what women must suffer". (Cosminsky, 1967a). One wonders if the increasing use of the supine delivery position will remove the physical justification for the husband's presence and thus, also remove the potential of partners sharing this major life event.

TABLE 6

BUDGET NEEDED FOR THE YEAR 1976

Training for 250 midwives		$ 7,500
Kits	250	3,250
Retraining	1,726	24,164
		$34,914

TABLE 7

COST OF TRAINING AND RETRAINING EMPIRICAL MIDWIVES

a) Per midwife:	
Per Diem	$30.00
Kit	13.00
Staff 120 classroom hours	40.00
	$83.00
b) Retraining	
Per Diem	$ 6.00
Staff 24 classroom hours	8.00
	$14.00

2. An evaluation of the effectiveness of the midwife training program at the client level is sorely needed. Such an evaluation should pay attention to the different utilization in selected communities of trained versus untrained midwives.

3. The current strategy of emphasizing the training population that is physically nearest to fixed facilities is not in itself undesirable, since it does tend to legitimize and professionalize the midwives involved in the eyes of the medical profession and perhaps, elevates her status in at least some clients' eyes. The strategy again underscores dependence on such facilities, and runs the risk of eventually overloading the health delivery circuits with great numbers of normal pregnancies which the system cannot afford to attend, and isolation of that large body of the rural population that has least access to modern medical assistance.

It is suggested here that midwife training be disaggregated into two programs. One would be a clinic-based program for those midwives and patients who are not prohibitively far from the clinic; the other would be a community-based program for areas outside a reasonable radius of a fixed facility which would attempt to "catch" midwives who have, by virtue of isolation, virtual total responsibility for life and death.

It is also suggested that the whole policy of referring all pregnancies to the clinic be reconsidered and the possibility considered of teaching midwives to identify high and medium-risk pregnancies for mandatory referral.

4. It is recommended that the whole customary training sequence be reordered so that the most crucial material is taught first, whether or not it accords with the natural life sequence of sexual relations, pregnancy, birth, and motherhood. The rationale for this is that a fair amount of attrition occurs in midwife training programs, i.e., women lose interest, the strain of travel is too much, husbands object and so forth. Older women may feel they know it all already and find the social and economic cost-benefit ratio unfavorable. The point is to convey as quickly as possible at the outset of any training course, what is absolutely crucial in life-and-death terms, a sort of "protective minimum", provide a minimum license to practise, and continue adding new skills and knowledge for those who persist in their motivation and consequently their attendance. The details of a possible sequence will be suggested below.

It is also suggested that there be a philosophical inversion as well in the structure and content of training programs, that is, an acceptance of the view that the two orders of medicine, modern and traditional, are not mutually exclusive, and it is not necessary to attempt total replacement of beliefs and behaviors. Tables 3, 4, and 5 indicate that a number of behaviors generally practiced by midwives are either innocuous or positive in their benefits, that agree, at least in methodology, with accepted modern practice, and that some exist about whose detriments and benefits very little

is actually known, although they are prohibited or denounced in carte blanche fashion by the medical establishment. It would be both more economical of training time and potentially more productive if the approach to curriculum content for midwives were to support non-detrimental or beneficial behavior and save the posture of rejection for those things that are truly dangerous.

Midwife training programs should be seen as the trainees see them, i.e., as extra to what they already know. Efforts to change perilous methods should be couched in terms of addition rather than subtraction. It might, for instance, be quite hard to persuade midwives to give up the practice of massage, but it might be possible to add the concept of gentle massage or dorsal massage and eventually substitute it. The more that training programs reach out into more geographically remote areas, the more important such issues will become.

5. Consideration should be given to the rewriting and reordering of the Guide for comadrona training. A possible new sequence, based on the hypothesis that the safest procedure is to emphasize the most important things early and save less crucial, more sophisticated elements for later, would be the following:

First, Crucial Training Phase.

a. Danger signs and their meaning, as they might occur in pregnancy, childbirth, and the post-partum period. This would include the signals for referral to clinic control

during pregnancy, the advisability of hospital birth, and the handling of situations where, given impediments of distance and terrain, the seeking of medical assistance might be impossible, such as post-partum hemorrhaging or unexpected difficult birth presentations. It would also include recognition of such birth-related perils as neonatal tetanus or infant diarrheas resulting in dehydration. With regard to the latter, the elaboration of simple, hygienic, culturally-compatible rehydration fluids could be taught.

b. Modification or substitution of heavy abdominal massage with some other therapeutic activity without peril to the mother.

c. Absolute elimination of fetal manipulation and drastic measures for extraction of the placenta.

d. Replacement or elimination of oxytocic herbals.

e. Techniques for aiding respiration in newborn which are mechanical substitutes for such dangerous behaviors as palate-pushing.

f. Vital hygiene for mother, child, and comadrona during childbirth, including umbilical and eye care, and sterilization of instruments.

At the end of this training phase, the comadrona could be given a laminated medallion coded with some unduplicable symbol, indicating that she had passed a basic course in midwifery, similar

to a learner's driving permit or a Beginner's Red Cross card, the meaning of which could be publicized on the radio as well as through fixed facilities. It might be possible also to construct by increments a midwifery kit, beginning with the elements most essential to maternal-child health and ending with more tangential items such as the case itself.

Second, Training Phase.

a. Elimination of sweatbaths during birth.

b. Putting the child to nurse immediately to take advantage of benefits of colostrum and effect on uterus.

c. Sex education, male and female physiology, family planning techniques, based on a consensus among social scientists and health workers alike, that most rural women are untaught in this regard.

d. Diet during pregnancy and lactation.

e. Handling of puerperal fever.

f. Referrals to fixed facilities of non-risk cases, if this is feasible.

This would be followedby a second marker on the midwife's licensing badge, and more midwifery equipment for the accumulating kit.

Third and Subsequent Training Phases.

a. These would include other elements now in the Guide, plus some basic first aid and perhaps injection techniques

focused on maternal tetanus shots, DPT administration, provision of vitamin and food supplements in remote areas, supply of family planning technology, basic mother-craft, and so forth.

In conjunction with such a program design, three rather simpler guides should replace the single major guide, with each of the three having simply-illustrated, low-cost picture guides for each comadrona, that would parallel the teaching content and reinforce it at home. A need exists also for audiovisual support material; the rubber pelvic models have been in general well received, but films are hard to get and hard to use, and it seems that inexpensive color slides and simple cassette machines would be more practical if any investment is to be made in such technology.

6. It may well be that the very difficult problem of supervision, an issue for all health delivery programs, could be relieved in part, by an incremental approach to training accompanied by oral testing and graduated rewards. This does not solve the problem of field supervision and the observation of whether or not midwives actually do what they have been taught and what they say they do. Given the skill of babies in evading adult attempts to plan, it may be that trying to supervise a comadrona on the job is a will-o'-the-wisp which does not merit the effort that might be expended. It might be possible, nevertheless, to evaluate midwives through another attempt at interviews with their clients, either in the

field or in the clinic. This could be the nub of the forthcoming comadrona component of the Rural Health Evaluation Project.

In addition to the research possibility just mentioned, research activity could be organized around two other areas:

a. An evaluation of the benefits and potential harm of behaviors and medications currently employed by traditional midwives. This would include issues of birth position, herbal use, antisepsis, types of massage, and dietary prescriptions and proscriptions. Such an analysis would best be carried out by a multidisciplinary team and should include detailed recommendations for adoption, maintenance, or rejection.

b. Selective evaluation in communities where trained midwives are operating to see what has happened to their status as a result of training, increase or decrease in clientele, increased community influence, relationship with fixed health facilities and personnel, changes in fee structure, difference in demand for trained versus untrained midwives, and general sense of satisfaction.

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